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1 1. A method for treating a bone defect, comprising:
2 identifying a bone site suitable for receiving an implant; and
3 introducing a strongly resorbable, poorly crystalline apatitic calcium phosphate
4 at the implant site, whereby bone is formed at the implant site.

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6 2. A method for treating a bone defect, comprising:
7 identifying a bone site suitable for receiving an implant; and
8 introducing a hydrated precursor to a strongly resorbable, poorly crystalline
9 apatitic calcium phosphate at the implant site, whereby the hydrated precursor is
10 converted *in vivo* to a poorly crystalline apatitic calcium phosphate and whereby bone
11 is formed at the implant site.

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13 3. The method of claim 1, wherein the poorly crystalline apatitic calcium
14 phosphate is introduced in the form selected from the group consisting of paste, putty
15 and preshaped object.

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17 4. The method of claim 2, wherein the hydrated precursor is introduced
18 in the form selected from the group consisting of paste and putty.

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20 5. The method of claim 3 or 4, characterized in that, said paste is
21 injectable for a time greater than about 10 minutes at about 25 °C, hardens within
22 about 10 to 60 minutes at about 37 °C.

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24 6. The method of claim 1, wherein said poorly crystalline apatitic calcium
25 phosphate has x-ray diffraction substantially as shown in Figure 3a.

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27 7. The method of claim 1, wherein the strongly bioresorbable, poorly
28 crystalline apatitic calcium phosphate has an X-ray diffraction pattern comprising
29 broad peaks at 2θ values of 26°, 28.5°, 32° and 33°.

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1 8. The method of claim 1, wherein the strongly bioresorbable, poorly
2 crystalline apatitic calcium phosphate is characterized in that, when placed in a rat
3 intramuscular site, resorption of at least 1 g of the material is at least 80% resorbed
4 within one year.

5
6 9. The method of claim 1, wherein the strongly bioresorbable, poorly
7 crystalline apatitic calcium phosphate is characterized in that, when placed in a rat
8 intramuscular site, resorption of at least 1 g of the material is at least 80% resorbed
9 within one month.

10
11 10. The method of claim 1 or 2, wherein the implant site comprises a tooth
12 socket.

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14 11. The method of claim 1 or 2, wherein the implant site comprises a non-
15 union bone.

16
17 12. The method of claim 1 or 2, wherein the implant site comprises a bone
18 prosthesis.

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20 13. The method of claim 1 or 2, wherein the implant site comprises an
21 osteoporotic bone.

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23 14. The method of claim 1 or 2, wherein the implant site comprises an
24 intervertebral space.

25
26 15. The method of claim 1 or 2, wherein the implant site comprises a
27 alveolar ridge.

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16. The method of claim 1 or 2, wherein the implant site comprises a bone fracture.

17. A method of preparing a ceramic implant, comprising:
mixing in any order,
(a) a reactive amorphous calcium phosphate,
(b) a second calcium phosphate, the second calcium phosphate and the reactive amorphous calcium phosphate in a proportion to form an apatitic calcium phosphate,
and
(c) a physiological liquid, said liquid in the amount to provide a paste or putty;
and
introducing the paste or putty into an implant site.

18. The method of claim 17, wherein the reaction is carried out at no greater than about 37 °C.

19. The method of claim 17, wherein the fluid selected from the group consisting of water, a physiologically acceptable pH-buffered solution, saline solution, serum and tissue culture medium.

20. The method of claim 17, wherein the paste or putty is injected into the implant site.

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